OEP Safety, Policy, Procedures, and Airspace Ring

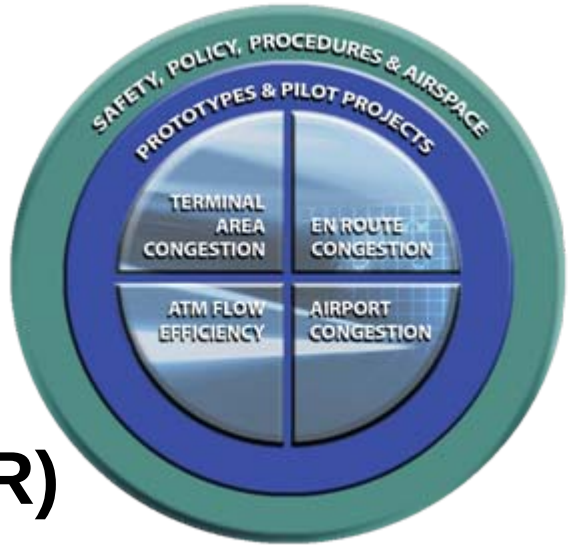
Federal Aviation Administration

May 2006

Safety, Policy, Procedures, & Airspace

Manager: John McGraw, Flight Standards Service, Flight Technologies & Procedures

Current Programs



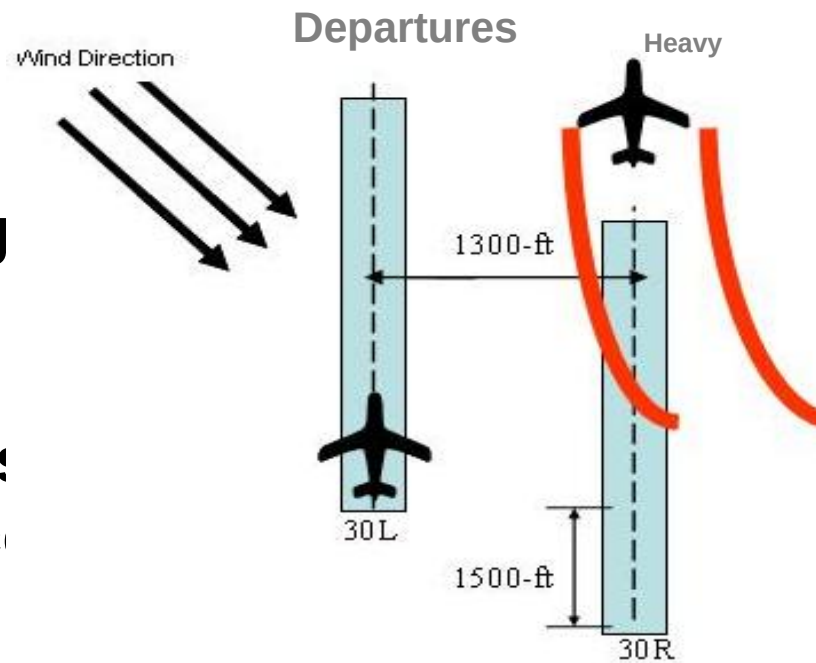
- **Mid Term Wake initiative**
- **Enroute Airspace Redesign**
- **RNP Special Aircraft & Aircrew Authorization Required (SAAAR)**
- **WAAS 200’ Approach Minima**
- **Oceanic and En Route Efficiency-WATRS**

Mid-Term Wake Turbulence Initiative

Project Sponsor: Steve Lang (ATO-R) & Wayne Bryant (NASA); Ops Sponsor: Dave Madison; User Champion: UAL, Rocky Stone

Wake Turbulence Research & Development effort to enhance Parallel Runway Departure and Arrival operations for Closely Spaced Parallel Runways (CSPR)

- **Reduce the wake separation (time and/or distance) following a heavy/B757 aircraft on departure or arrival when closely spaced parallel runways (CSPR) have centerline distanc less than 2,500 feet apart**



Wake - Continued

- **Anticipated Benefits**
  - During visual conditions coinciding with periods when crosswinds permit safe wake independent operations, available departure and arrival slots per hour are increased
  - Departure rates will potentially be increased, thus increasing the airport's average daily capacity
  - Increase percentage of on-time arrivals, reduce delays, increase daily capacity, and improve efficiency

- **Implementation**
  - Initial development in FY09 if JRC approve
  - Safety case to be completed

- **Issues with transition into Core**
  - Schedule for implementation and benefits accrual
  - Pilot and controller participation and acceptance
  - Industry, community, and FAA commitment to complete the project (including funding)
  - Demonstration of a prototype system
  - Strong FAA operational support for use of angled ILS

Airspace Redesign

Project Leader & Ops Sponsor: Nancy Kalinowski, ATO; User Champion: Airspace Working Group

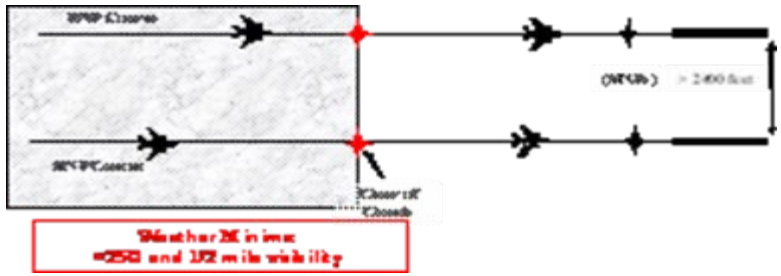
Airspace Management Program (AMP) is the FAA initiative to review, redesign, and restructure the nation's airspace

- **Anticipated Benefits**
  - Reduction in departure and arrival delays and increase in airport capacity
  - Reduce restrictions and improve flight profiles
  - Estimated benefits for projects $6M-$18M a year (customer ADOC benefits)
- **Scope and Applicability**
  - Terminal, en route and oceanic airspace redesign projects that have been chartered but unfunded in FY05 and FY06
  - E.g.: Southern California Redesign, Potomac & ZDC Redesign, High Altitude Redesign
- **Issues with transition into Core**
  - Sustained funds for design, implementation and post-implementation evaluation

RNP SAAR—Future Approach Application

Project Leader: Jeff Williams, Program Manager RNAV/RNP, ATO System Operations & John McGraw, Manager Flight Technologies and Procedures Division, AFS; Ops Sponsor: ATO System Operations Service; User Champion: PARC (Performance-Based Operations Aviation Rulemaking Committee)

- **RNP Parallel Approach with no transition (RPA) using low RNP and high containment integrity**



- **Simultaneous Converging Instrument Approaches (SCIAs)**

RNP- Continued

- **Anticipated Benefits**
  - RPA
    - Increase capacity and efficiency at busy airports by enabling aircraft to perform RPA in IMC
  - SCIA
    - Allows guided turns in missed approaches that would lower approach minimums and increase use during bad weather
  - Increase safety through continuous descent procedures that reduce the risk of controlled flight into terrain (CFIT).
  - Reduce delays at airports through the application of:
    - new parallel routes, newly enabled ingress/egress points around busy terminal areas, make better use of closely spaced procedures and airspace, and de-conflict adjacent airport flows.

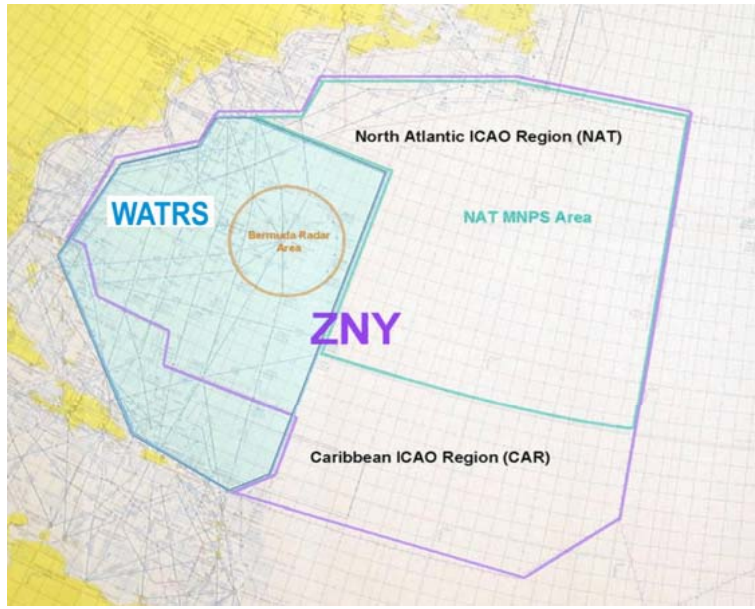
- **Issues with transition into Core**
  - Development and acceptance of separation criteria for RPA is dependent on Dual and Triple Simultaneous Operations study outcome and subsequent safety case
  - Development and acceptance of SCIA separation criteria between missed approach points of less than 3 nautical miles which will need a safety case
  - New site locations for RPA and SCIA projects must be coordinated with PARC

Oceanic and En Route Efficiency

Project Leader: Kevin Chamness; Project Sponsor: Ann Moore, ATO-E; Ops Sponsor: Pete Hruz, ZNY, User Champion: TBD

- **Airspace and Route Structure analysis for application of reduced lateral separation in the West Atlantic Route System (WATRS)**

- **Application would change the required aircraft separation in the WATRS airspace from 90 NM to 50/60 NM**



WATRS - Continued

- **Anticipated Benefits**
  - Increase capacity and optimize route structure
  - At the introduction of this initiative, IATA anticipated significant improvements to fuel efficiency for impacted aircraft while imposing no penalty on non-participating aircraft
  - While the FAA has not conducted a study to detail the benefits, sufficient empirical evidence that a 44% reduction in separation will provide significant improvements in efficiency

- **Issues with transition into Core**
  - funding has not yet been identified
  - Competing with other priorities within the Separation Standards Analysis division of the FAA Technical Center
  - Requires ICAO approval from the North Atlantic and Caribbean ICAO Regions
  - Implementation of reduced lateral separation standards require aircraft approval for RNP-10

WAAS 200’ Approach Minima

Wide Area Augmentation System to 200’

Project Leader: Leo Eldredge, ATO Technical Ops; Ops Sponsor: AFS-400; User Champion: Flying public: AOPA-General Aviation & NBAA Regional Airlines

- **Extend the use of WAAS from 250 ft. above airport elevation down to 200 ft. on instrument approaches at airports that do not have existing ILS infrastructure**

- **Anticipated Benefits**
  - Accuracy equal to ILS Category I minimums
  - Allows for removal of ground based navigation
  - Allows for implementation at airports where ground based navigation cannot maintain signal strength or accuracy
  - Increase efficiency by providing approaches with lower landing minimums, which in turn reduce diversions or holding time

- **Issues with transition into Core**
  - Developing criteria for implementation at airports without ILS infrastructure
  - Possible cost factor associated with development of infrastructure at airports without precision runway components: ALSF, runway lighting system, and runway markings

Criteria Matrix for Entry Into the Safety, Policy, Procedures & Airspace Ring

	Risks have been evaluated and appear to be manageable	Initial funding sources have been identified	Reasonable estimate of all implementation costs exist and the project is expected to be affordable by all	Estimates of operational benefits exist and have been identified	There is both an FAA operations and operating user champion	Existing and proposed policy has been evaluated for applicability	Compatibility with existing procedures has been evaluated	Schedule estimate exist for when benefits will accrue	The change supports current plans and operational concepts
RNP SAAAR (RPA & SCIA)	yes	yes	yes	yes	yes	yes	yes	yes	yes
WAAS 200' Approach Minima	yes	yes	yes	yes	yes	yes	yes	yes	yes
Mid Term Wake	yes	yes	yes	yes	yes	yes	yes	yes	yes
Reduced Lateral Separation in WATRS Airspace	yes	yes	yes	yes	yes	yes	yes	yes	yes
Airspace Redesign	yes	yes	tbd	yes	yes	yes	yes	yes	yes